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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/753,972

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Stephen A. Boppart

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09/03/2009

EVAN LAW GROUP LLC

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EXAMINER

SHAHRESTANI, NASIR

ART UNIT

PAPER NUMBER

3737

MAIL DATE

DELIVERY MODE

09/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**SUPPLEMENTAL
Notice of Allowability**

Application No.

10/753,972

Examiner

NASIR SHAHRESTANI

Applicant(s)

BOPPART ET AL.

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication received on 12/02/2008.
2. ☒ The allowed claim(s) is/are 1,7-9,12-16,18,22,23 and 25.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 09/20/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/BRIAN CASLER/
Supervisory Patent Examiner, Art Unit 3737

EXAMINER'S AMENDMENT

(Supplemental)

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Paul Rauch on 03/12/2009.

The application has been amended from the claim set **dated 10/11/2007** as follows:

1. (Currently Amended) ~~A method of forming an image of a sample, comprising: forming an image of a mixture, by exposing the mixture to electromagnetic radiation; wherein the mixture comprises the sample and plasmon-resonant nanoparticles, [[and]] wherein the electromagnetic radiation is in the frequency range of infra-red to ultraviolet light, and wherein the plasmon-resonant nanoparticles are anisotropic metallic nanoparticles.~~

A method of forming an image by optical coherence tomography, comprising: forming an image of a mixture by exposing the mixture to electromagnetic radiation; wherein the mixture comprises a patient and plasmon-resonant nanoparticles, wherein the electromagnetic radiation is provided to the mixture using optical coherence tomography in the frequency range of infra-red to ultraviolet light, and wherein the plasmon-resonant nanoparticles are anisotropic metallic nanoparticles having an extinction coefficient of at least $10^6 \text{ M}^{-1} \text{ cm}^{-1}$ at a

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frequency in the range of 10^{12} to 10^{17} Hz, wherein the anisotropic metallic nanoparticles comprise a magnetic metal, and wherein the magnetic metal is selected from nickel, cobalt, iron, and combinations thereof.

2. (Cancelled)

3. (Cancelled)

10. (Cancelled)

11. (Cancelled)

15. (Currently Amended) The method of claim ~~40~~ 1, further comprising exposing the mixture to a magnetic field.

16. (Currently Amended) The method of claim ~~40~~ 1, further comprising exposing the mixture to an electric field.

17. (Cancelled)

18. (Currently Amended) The method of claim ~~3~~ 1, wherein the ~~sample~~ patient is a human patient.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) ~~In a method of forming an image by optical coherence tomography, including exposing a patient to electromagnetic radiation, collecting reflected electromagnetic radiation, and forming an image from the collected electromagnetic radiation, the improvement comprising administering anisotropic metallic nanoparticles to a patient to enhance contrast of the image,~~

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~~wherein the anisotropic metallic nanoparticles are gold nanorods with a magnetic tip.~~

A method of forming an image by optical coherence tomography, comprising:
administering to a patient, anisotropic metallic nanoparticles having an extinction
coefficient of at least $10^6 \text{ M}^{-1} \text{ cm}^{-1}$ at a frequency in the range of 10^{12} to 10^{17} Hz;
wherein the anisotropic metallic nanoparticles are gold nanorods with a magnetic tip, and
wherein the magnetic tip is one metal selected from the group consisting of cobalt, nickel, and
iron;

exposing the patient to electromagnetic radiation;

collecting reflected electromagnetic radiation; and

forming an enhanced contrast image from the collected electromagnetic radiation.

24. (Cancelled)

26-40. (Cancelled)

The following is an examiner's statement of reasons for allowance:

The prior art of record does neither teach nor suggest a method of forming an image of a patient using optical coherence tomography, wherein the patient has been administered nanoparticles being plasmon-resonant nanoparticles having properties as specifically defined by the disclosure, nor do they teach the use of anisotropic nanoparticles having coefficients as

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specifically defined by the disclosure, comprising gold nanorods with magnetic tips, to improve image contrast.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NASIR SHAHRESTANI whose telephone number is (571)270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art Unit
3737

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/Nasir Shahrestani/

Examiner, Art Unit 3737